



Marine Safety Center Technical Note

MTN 1-00
16717/SOLAS
February 18, 2000

Subj: SOLAS Double Bottom Requirements for Cargo Vessels, other than Tankers

Ref: (a) International Convention for the Safety of Life at Sea, 1974, and its Protocol of 1978 (SOLAS)
(b) MSC letter, serial H1-9502554, dated June 23, 1995
(c) MSC letter, serial C1-9703240, dated October 23, 1997

1. Purpose: This Technical Note provides guidance for applying double bottom requirements for cargo vessels greater than 500 gross tons (ITC), other than tankers, subject to the requirements of reference (a). Previous guidance issued under references (b) and (c) is superseded.

2. Discussion:

a. Previous guidance issued under references (b) and (c) allowed cargo ships to meet the double bottom requirements for passenger ships found in SOLAS Regulation II-1/12, in lieu of the requirements in SOLAS Regulation II-1/12-1, for cargo ships. The requirements for passenger ships, which contain reduced double bottom requirements for vessels less than 76 m in length, were considered to provide an equivalent level of safety.

b. This policy has been re-examined in light of the recognized differences between the subdivision and damage stability requirements for passenger and cargo ships. Cargo vessels less than 80 meters in length have no subdivision or damage stability requirements under SOLAS. In contrast, all SOLAS passenger vessels are subject to subdivision requirements. Since small cargo vessels have no subdivision requirements, acceptance of the relaxed passenger ship double bottom requirements for these vessels results in an overall reduction in the level of safety intended by Regulation II-1/12-1.

c. Therefore, the Coast Guard position concerning double bottom requirements for cargo ships is revised; the requirements in Regulation II-1/12 will no longer be accepted as being equivalent to the requirements in Regulation II-1/12-1. Guidance is also provided for interpreting the wording of Regulation II-1/12-1.1, which states the double bottoms shall be fitted "... as far as this is practical and compatible with the design and proper working of the ship." The Coast Guard recognizes that there may be circumstances where the fitting of a full double bottom from collision bulkhead to afterpeak bulkhead would grossly interfere with the design and proper operation of the vessel.

3. Applicability: The guidelines provided in this Technical Note apply to all U.S. flag cargo vessels to which a SOLAS Safety Construction Certificate will be issued, and that have keel laying dates or contract dates for major modification after the date of issue of this guidance.

4. Action:

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a. Previous Coast Guard guidance issued under references (b) and (c) is rescinded. The U.S. Coast Guard Marine Safety Center (MSC), as well as authorized organizations conducting reviews on behalf of the U.S. Coast Guard, will apply the requirements of Regulation II-1/12-1 without consideration for the reduced requirements (based on vessel length) of Regulation II-1/12.

b. Proposed designs which do not include the fitting of a complete double bottom from collision bulkhead to afterpeak bulkhead shall be submitted for review along with compelling justification that a complete double bottom is not practical or compatible with the design and proper working of the ship. Reviewing authorities may accept the proposal if the following general criteria are well supported in the justification of the design proposal.

i. The fitting of a complete double bottom would grossly interfere with the design and operation of the vessel. In other words, a full double bottom would prevent or greatly hinder the vessel from performing a necessary operation. Increased production costs or marginal performance penalties resulting from the double bottom design will not be considered as compelling evidence.

ii. The vessel's susceptibility to hull penetrating bottom damage and flooding has been mitigated to the greatest extent possible in those areas where a double bottom is not fitted. In this regard, proposals shall demonstrate that the size of the area lacking a double bottom has been minimized as much as possible. The likelihood of occurrence and the vessel's ability to survive bottom damage in the area lacking a full double bottom will also be strongly considered. (We note that in general, meeting damage stability criteria is not considered equivalent to and will not be accepted in lieu of global installation of a double bottom.) Other possible mitigating factors may include: increasing hull plate thickness and scantlings in way of the installed single bottom, utilizing well subfloors by locally reducing double bottom height in lieu of installing a single bottom well, and locating the single bottom areas above the baseline or lowest extremities of the vessel. Design proposals that do not include mitigating efforts will normally be rejected.

c. The depth of the double bottom shall in general satisfy the minimum requirements of 46 CFR 171.105(e). Alternatively, the double bottom dimension requirements of a recognized class society may be acceptable upon review and approval by the MSC.

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